

TRAFFIC COMMISSION REPORT

November 18, 2010

Item VC

SCRAMBLE CROSSWALK AT MAGNOLIA / SAN FERNANDO

ISSUE:

An officer in the Burbank Police Department suggested that staff review the potential for a “scramble” crosswalk at the intersection of Magnolia Boulevard and San Fernando Boulevard. A scramble crosswalk is established when a separate traffic signal timing phase is given to pedestrians and all vehicular traffic is stopped at the intersection. This traffic signal operation allows pedestrians to cross the street in any direction. Attachment 1, a press release from LADOT, describes a scramble crosswalk operation.

BACKGROUND:

Exclusive pedestrian walk signal phases have been used since the 1950s and include a location in Los Angeles. The City of Pasadena has two scramble crosswalks on Colorado Boulevard in Old Pasadena that have been operational for over ten years. The City of Los Angeles is installing these crosswalks at a number of locations, and they are planning to install scramble crosswalks at nine additional locations:

- Broxton and Weyburn (Westwood)
- 11th and Maple (downtown)
- 12th and Maple (downtown)
- 11th and Santee (downtown)
- 12th and Santee (downtown)
- Pacific and Windward (Venice)
- Hoover and Jefferson (Exposition Park)
- Jefferson and McClintock (Exposition Park)
- Erwin and Owensmouth (Woodland Hills)

Other communities have also used them.

The intersection of Magnolia Boulevard and San Fernando Boulevard is the main pedestrian connection between Downtown Burbank Village and the Media Center Mall, and it is a major junction for two arterial streets. The intersection is heavily used by both pedestrians and vehicles during peak afternoon shopping periods between about noon and 5 PM. Magnolia Boulevard carries about 16,000 vehicles per day in the downtown, and San Fernando Boulevard carries about 7,500 vehicles per day. Pedestrian traffic has not been counted, but the afternoon volume is significant. See Attachment 2 for traffic demand.

San Fernando Boulevard is particularly impacted by pedestrian traffic. The street has two approach lanes at Magnolia Boulevard: the number 1 lane is marked for left turn only and the number 2 lane is marked for left and right turns. During the afternoon

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hours, pedestrian activity significantly reduces left turn throughput capacity from both lanes, effectively blocking the entire approach.

A scramble crosswalk, which provides for an exclusive pedestrian phase, is intended to free up the vehicle phases for turning traffic. At the San Fernando Boulevard / Magnolia Boulevard intersection, the pedestrians regularly constrict the turning movements through the intersection during the afternoon traffic hours.

DISCUSSION:

Scramble crosswalks have been used in a number of communities for a number of years. As with all operational changes, the scramble crosswalk has positive and negative aspects. A little more than 10 years ago, scramble crosswalks were installed in Burbank on San Fernando Boulevard at Orange Grove Avenue and at Palm Avenue. The system was in place for about two weeks prior to the removal at both locations. Pedestrians tended to walk during all phases of the signal cycle, resulting in significant traffic congestion at these intersections.

The traffic signal at San Fernando Boulevard and Magnolia Boulevard operates at a 90 second cycle between 6:30AM and 8:00PM, and at a 70 second cycle during the remaining period. The 90 second cycle is the shortest cycle that can be used while serving all traffic and pedestrian demand at the intersection. The 90 second cycle is used for coordination both in the downtown area and along Magnolia Boulevard.

A scramble crosswalk system would result in several problematic issues with the signal timing. A scramble crosswalk would require the addition of a 12 second all pedestrian green phase and a 12 second don't walk phase to provide for a diagonal crossing of 90 feet for pedestrians. It would be extremely difficult to add the 24 second all-pedestrian phase and still adequately serve the current traffic demand at the intersection.

Magnolia Boulevard is one of two freeway crossings in the downtown area; consequently, the street is heavily used by traffic crossing the freeway. The San Fernando / Magnolia intersection is a critical intersection for this crosstown traffic movement. Any reduction in the Magnolia Boulevard green time would add to the congestion on Magnolia Boulevard during peak travel hours.

The 90 second signal cycle is used throughout the downtown and along Magnolia Boulevard. The additional time required for the scramble crosswalk would necessitate increasing the coordinated cycle time by at least 15 to 20 seconds. The longer cycle length would increase vehicle delay time in the downtown area and along Magnolia Boulevard without improving crossing opportunities for pedestrians at other intersections.

The scramble crosswalk does not improve the crossing opportunities for pedestrians at San Fernando Boulevard and Magnolia Boulevard. The system is designed to

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encourage diagonal crossings of the intersection so the pedestrians do not have to cross two legs to get the diagonally opposite corner. Since this intersection is a tee intersection, pedestrians do not have to cross two legs of the intersection to get to the diagonally opposite corner.

Finally, pedestrians do not observe the vehicle only phases of a scramble crossing system. Observations of the crosswalks in Pasadena and the experience of the crosswalks in Burbank showed that pedestrians often cross with the green vehicle phases in addition to the scramble phase. Thus, the positive aspects of the scramble system are negated by pedestrian walking habits.

CONCLUSIONS:

The scramble crosswalk system can be beneficial at the proper location, where pedestrian traffic is very heavy and vehicular traffic is relatively light. It also facilitates pedestrians crossing to the diagonal corner of the intersection. The intersection of San Fernando Boulevard and Magnolia Boulevard does not have the geometrics, the heavy pedestrian volumes or the light traffic volumes that would make the scramble system beneficial at this location. The possible benefits are not achieved and a scramble system would dramatically reduce efficiency at other intersections in the coordinated system operation.

RECOMMENDATIONS:

Staff recommends no change in the operation of this intersection.

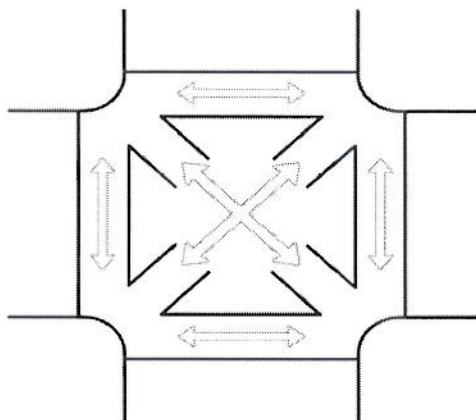
ATTACHMENTS:

1. LADOT Press Release for Scramble Crosswalks
2. Traffic Demand on Magnolia Boulevard and on San Fernando Boulevard

DIAGONAL CROSSWALK

Pedestrian and bicycle safety, and their association with vehicle traffic, is of major concern in the City of Los Angeles. Improving the safety and efficiency of existing intersections through the implementation of pedestrian crosswalk enhancements can prevent potential accidents and alleviate traffic congestion. LADOT will minimize pedestrian interaction with vehicle traffic at busy intersections by installing “diagonal crosswalks,” which are now being implemented in the City of Los Angeles.

History The concept of the pedestrian scramble crosswalk goes back to legendary traffic engineer Henry Barnes, who implemented the concept in downtown Denver, Colorado, in the 1950’s. It was known as the “Barnes Dance”. The idea was intriguing and was tried in numerous cities, including downtown Los Angeles in 1956-58. Recently, to improve the pedestrian environment, the diagonal crosswalk has seen a resurgence after 50 years.



Application. The pedestrian diagonal crosswalk is a valuable tool with the advantages of:

Pedestrians can cross without vehicle conflicts.

Pedestrians can cross diagonally, thus avoiding two crossings.

Vehicles can turn right or left without having to yield and wait for pedestrians when the traffic signal light is green for them.

The application is appropriate where pedestrian volumes are high across all legs of the intersection throughout the day; the location does not involve two arterial thoroughfares, and there are high turning conflicts between vehicles, pedestrians and bicyclists. Safety is improved because pedestrians and bicyclists have their own ‘exclusive’ phase in which to cross the street without conflict from turning vehicles. However they must only cross on the “Walk” signal, never on the “Green” light.

Cost Each pedestrian diagonal crosswalk will cost approximately \$7000. Diagonal crosswalks can improve the turning capacity of intersections by decreasing stops and delays due to pedestrians crossing while vehicles wait in intersections to turn; and enhance pedestrian and bicycle safety at the 10 intersections listed below:

Broxton & Weyburn
Le Conte & Westwood
Pacific & Windward
Erwin & Owensmouth

11th & Maple
11th & Santee
Hoover & Jefferson

12th & Maple
12th & Santee
Jefferson & McClintock

